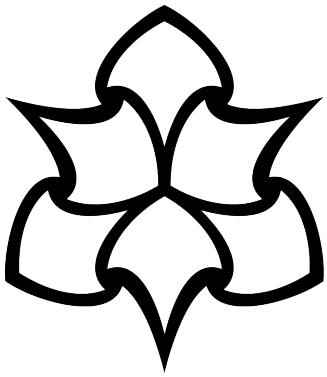

A Quantitative Study Investigating the Effect of Age and Gender on Adult Sibling Rivalry.

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April 2018

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ABSTRACT

The current study looked to observe whether gender and age had a significant effect on the occurrence of adult sibling rivalry. A modified version of the Adult Sibling Relationship Questionnaire (Stocker et al., 1997) was distributed to 116 adults aged between 18 and 69. Sibling rivalry was measured looking at six key characteristics; conflict, jealousy, admiration/pride, superiority and maternal/paternal rivalry and closeness. Data was analysed using a series of ANOVA and Tukey post-hoc tests. Sibling Rivalry was found to be highest in Males aged 46+ and a significant main effect was found between participants aged 18-28 and participants aged 46+. A further significant main effect was found between age groups 18-28 and 46+ regarding sibling conflict and superiority. However, no significant effect was found between age and gender regarding sibling admiration/pride, closeness, jealousy and maternal/paternal rivalry.

KEY WORDS:	SIBLING RIVALRY	AGE	GENDER	ADULTHOOD	LIFE COURSE

Introduction

Sibling rivalry is a widely recognised characteristic of sibling relationships. Volling et al. (2010:387) describe the phenomenon as "the feelings of envy, jealousy and competitiveness that exist between brothers and sisters within the family". However, this characterisation of sibling rivalry has been disputed, Neubauer (1983) suggested a critical distinction between rivalry and jealousy, stating that rivalry is a reaction to fear of losing the primary caregiver/parents, whereas he suggests jealousy to be the fear of losing the affection and attention from said parents/caregiver. Alternatively, Howe and Recchia (2008) observe sibling rivalry to be a result or manifestation of jealousy between siblings.

Sigmund Freud (1899) was one of the first to identify sibling rivalry as a widely occurring psychological phenomenon (Isaacs, 2016). Freud first commented on sibling rivalry upon studying "the fierceness of children's dreams" whereby he noted that the occurrence of rivalry is "far more frequent in childhood than the unseeing eye of the adult observer can perceive" (Freud 1899; cited in Freud, S and Robertson, R, 2008). Freud suggested the root of sibling hostility to be due to the rivalry for parental resources, and this belief was further supported in the 1930's by David Levy who coined the term ‘sibling rivalry' (Isaacs, 2016). Additionally, Alfred Adler (1931) offered further explanation as to the occurrence of sibling rivalry with the Family Structure Theory, looking closely at the effects of birth order, gender and age gap as predictive/risk factors of rivalry. Adler (1931) noted that sibling rivalry occurred more commonly between opposite-sex pairs of siblings, this is believed to be due to parents treating male and female children differently, thus creating an environment for rivalry to thrive (Volling, 2010).

Further theory on the prevalence of sibling rivalry comes from the evolutionary domain. Evolutionary theory suggests that rivalry stems from competition over physical resources, for example, food, and non-material resource such as parental affection/attention as a means of enhancing chances of survival (Reis and Sprecher, 2009). The characteristics of rivalry are that of competitiveness and jealousy, usually beginning around the time of the second child’s birth (Reis and Sprecher, 2009). Sibling rivalry has been found to be expressed in a variety of different ways most commonly, conflict, arguments and bickering. However, sibling rivalry may also manifest itself in the form of deceptive behaviour, for example attempting to get the other sibling into trouble as a means of drawing parental favour away from a said sibling (Coleman and Ganong, 2014). The presence of rivalry in sibling relationships is wholly seen as a negative relationship characteristic. However, Coleman and Ganong (2014) highlight how rivalry often occurs alongside closeness, thus presenting the complexity of sibling relationships and a need for a multi-dimensional approach of study (Stocker et al., 1997).

Levy's (1939) observational research consisted of the use of celluloid mother and baby sibling dolls in a play therapy context. The researcher would suggest to the child participant that the mother doll is nursing the participants new baby sibling and

suggest for the participant to, through play, express how this makes them feel or how they would act in this situation. Levy's (1939) sample originally consisted of American children, however later the study was repeated with a Guatemalan Indian sample and further repeated with an Argentinian sample. By repeating the experiment with various samples, the results from this study were key in expressing sibling rivalry as a global, innate, part of human nature. Although there were between-sample differences due to culture, sibling rivalry was without a doubt expressed by all samples from all three of the locations. Rivalrous feeling towards the feeding baby doll was shown in a multitude of ways, both verbal and physical. One child from the Guatemalan sample expressed that "the sister is sad because the mother is taking care of the other" (Levy, 1939:209) and later remarks "the sister does not care about her. When they buy something nice they will give it to the baby and not to the sister" (Levy, 1939:209). These verbal remarks were interpreted as clear demonstrations of feelings of sibling rivalry due to parental resources being directed elsewhere. Furthermore, in the American sample, a young boy aged four ‘shook his fist' at the doll and commanded it to "stop it" followed by proceeding to make ‘sucking noises' above the head of the mother doll. Through observation of both verbal and physical behaviour, rivalrous feelings were observed as prominent and frequent across all three samples. Levy's (1939) study was influential in that it offered a global perspective on the sibling rivalry phenomenon. Furthermore, this observational technique was commended for displaying a "considerable insight into the intensity, direction, and form of sibling hostility" (Reckless, 1939: 454).

However, much of the previous research on sibling rivalry is focused on childhood sibling relations due to the nature of the early literature being predominantly psychoanalytic (Isaacs, 2016; Stocker et al., 1997). Although, more recent research has focused on sibling rivalry in adult sibling relationships and changes within these relationships over one's life-course (Cicerilli, 1985,1995; Ross and Milgram, 1982; Bedford, 1989; Gold, 1989). Adult sibling relationships are found to be an area of interest as, unlike childhood sibling relationships, adult sibling pairs commonly live independently of each other; thus the relationship is maintained predominantly by choice rather than due to cohabitation within a family environment (Cicerilli, 1985). An additional difference between the study of childhood sibling relationships and adult sibling relationships is that of ‘normative developmental transitions' (Stocker et al., 1997), for example getting married, starting a family or embarking on a career. How sibling's interactions and relationships change throughout and during these transitional moments throughout the life course is an interesting area of study. Stocker et al. (1997) aimed to create a self-report questionnaire to observe adult sibling relationships, looking to see how and if they differ from that of childhood sibling relationships and to examine any individual differences both between and within age groups, thus they created the Adult Sibling Relationship Questionnaire (1997).

Furthermore, a key feature of sibling rivalry is that of conflict over parental attention and affection, as seen in Levy's (1939) study. Stocker et al. (1997) aimed to observe whether conflict and rivalry over parental resources remains a characteristic of sibling relations in adulthood. Their findings suggested conflict and rivalry remain a dominant characteristic of adult sibling relations despite siblings no longer living together, thus suggesting sibling rivalry and conflict amongst adults to be an interesting area of study. Further support for this continuation of conflict and rivalry

into adult sibling relations can be found from Bedford's (1989) finding that 71% of adult's experience sibling rivalry at some point in their life and 45% of which reported still harbouring rivalrous feelings in later adulthood. Additionally, Ross and Milgram (1982) looked to offer an explanation as to why sibling rivalry may decrease with age, concluding that many siblings look to repair their relationships when they reach adulthood. The current study aims to observe the adult sibling relationship in more detail, looking to see if there are differences in sibling rivalry across adulthood.

There is a wealth of research studying the effects of gender on sibling rivalry however much of the previous literature is inconclusive (Howe and Recchia, 2008; Tucker et al., 2012; Ata Aktürk and Demircan, 2016). As previously mentioned, sex differences in sibling rivalry have been believed to be due to differential parental treatment due to gender norms and stereotypes. Kubo and Chaudhuri (2016) looked to examine the effects on health of sibling rivalry and gender-based parental preferential treatment in China under the one-child policy. Their study highlighted an increase in rivalry between brother-brother sibling pairs due to higher competition over resources, whereas the presence of one brother had a positive effect on girl's health status. Although this policy is currently only implemented in China, thus the findings are limited to that of Chinese sibling relations, the study does begin to show the presence and effect of gender-based preferential treatment on sibling rivalry.

Tucker et al.'s (2012) research aimed to observe whether sex composition of siblings has a role to play in the level of proactive and reactive aggression between siblings. They observed that sibling rivalry was most prevalent among adolescent older sister-younger brother dyads. Alternatively, Ata Aktürk and Demircan (2016) looked to observe the effect of same-sex or opposite-sex sibling dyads on sibling rivalry finding that pre-school children from same-sex and opposite-sex sibling compositions did not differ from each other concerning rivalry. On the contrary, Cicerilli (1985) found rivalry to be greatest between pairs of brothers and least prevalent between mixed-gender sibling compositions. Overall, the previous literature regarding gender, sibling sex-composition and rivalry seems to be inconclusive and vague, the current study aims to observe whether gender differences are influential in rivalry between siblings.

A range of different methods have been used to study sibling rivalry ranging from the observational play therapy seen in Levy's (1939) study, qualitative clinical interview techniques (Bedford, 1989) to various self-report measurements and scales. There are many quantitative questionnaires and scales made with the intent to study sibling relations, for example, the Sibling Relationship Questionnaire (SRQ; Jones, 1987) and the Sibling Relationship Inventory (SRI; Boer et al., 1997). Both the SRQ and the SRI observe rivalry to be a factor within, or a sub-dimension of sibling relations, however, both focus on the sibling relationship as a whole, looking at a variety of other factors such as ‘warmth’ and ‘closeness’. The Pre-School Children Sibling Rivalry Scale (PSRS; Ata Aktürk and Demircan, 2016) is compiled of both the aforementioned scales, along with the Webster and Berry Sibling Envy and Jealousy Scale (SEJS; Webster, 1998), the Sibling Interaction Scale (SIS; Hoyer, 1982) and the Survey for Identifying Sibling Rivalry of Preschool Children (Yiğen, 2005). The PSRS was deemed a successful tool for measuring rivalrous relations in pre-school aged siblings. In testing the PSRS Aktürk and Demircan (2016) looked to examine the effect of sibling gender composition on sibling rivalry, however, found no

significant difference in the sibling rivalry between pre-school children with same and opposite-sex siblings.

As mentioned prior, sibling rivalry was predominantly focused towards childhood sibling relations in the earlier literature. Thus, there appears to be a more extensive variety of methods for studying rivalrous sibling relations between children than there is for adults. Alternatively, Stocker et al.'s (1997) Adult Sibling Relationship Questionnaire (ASRQ) looks at adults perception of sibling relationships. Adult sibling relationships were deemed an essential area of study as "the psychological meaning of a relationship and the felt support or conflict provided by that relationship resides internally… and influences patterns of interaction" (Olsen, 1977; Quoted in Stocker et al., 1977:211). This study of 'perception' offers an alternative approach to the study of familial relations as it enables the researcher to observe one-side of a relationship against the other. The current research aims to observe whether age and gender influence the perception of rivalry within adult sibling relationships.

Research Question-
Is the perception of sibling rivalry as a characteristic of adult sibling relationships affected by age and gender?

Hypotheses-
From analysis of the previous literature surrounding this area of study, it is believed that the current research will find A) sibling rivalry to be more prevalent in the younger cohort than the older cohort and B) there will be a difference in perception of rivalry between male and female participants in both the younger and older groups.

Method

Design
The current study followed a within-subject design, in which all participants participated in a modified version of the Adult Sibling Relationship Questionnaire (Stocker et al., 1997). There were no control groups and no further conditions.

Ethical Considerations
Prior to gathering the sample the proposal was reviewed by the Manchester Metropolitan University Psychology Department ethics committee and had been granted ethical approval (see appendix 1.)
Informed consent was obtained (see appendix 2) from all participants and anonymity was maintained throughout. Participants were asked to create a unique code using the first three letters of the street they live on followed by the day they were born. The creation of this code was in order to achieve anonymity throughout the study yet still enable participants to request data withdrawal if necessary/required.
Participants were fully briefed before via the participant information sheet (see appendix 3), and debriefed upon completion.

Participants
116 adults ranging from 18-69 participated, with a mean age of 32.81 years (SD: 14.23). All participants had at least one sibling, and the sample was gathered via opportunity sampling. The sample was collected via the use of the Manchester

Metropolitan University Psychology Department student participation pool, whereby students take part in each other's studies in order to obtain points which, upon reaching 300, enables them the use of the pool for their own research. Furthermore, the questionnaire was posted on social media platforms, Facebook and Twitter alongside the participant information sheet (see appendix 3) which was also displayed again at the start of the questionnaire). Social media was chosen as a means of obtaining the sample as it enables access to a broader distribution of people from various demographics.
Upon gathering the data, the sample was split into three age groups GenY, GenX and 46+. GenY representing 60 participants aged 18-28 years, GenX consisting of 22 participants aged 29-45 years and 46+ years for the remaining 32 participants. The sample was further split into male and female groups, with 38 males and 78 females.

Measures
Adult Sibling Relationship Questionnaire (Stocker et al., 1997) (See appendix 5):
A modified version of the Adult Sibling Relationship Questionnaire (ASRQ) (Stocker et al., 1997) was used in this study.
Stocker et al. (1997) developed the ASRQ by first identifying critical characteristics of sibling relationships which adults vary on. The key features identified were as follows; support and affection, close and accepting, conflict and rivalry and power and status.
The ASRQ is a self-report questionnaire, which was aimed to be completed quickly within group settings. The questions were devised to assess the participant's personal feelings and behaviours towards their sibling and furthermore, their perception of their sibling's feelings and behaviours towards them.
The questionnaire consists of 81 items, grouped into 14 themes/sub-scales; Intimacy, Affection, Knowledge, Acceptance, Similarity, Admiration, Emotional Support, Instrumental Support, Dominance, Competition, Antagonism, Quarrelling, Maternal Rivalry and Paternal Rivalry (see appendix 3 for all items).
Each question is answered using a 5 item Likert Scale ranging from ‘hardly at all' (1) to ‘extremely much' (5). However, the questions concerning paternal/maternal rivalry were scaled using a 5 item Likert Scale ranging from ‘participant is usually favoured' (1), ‘participant is sometimes favoured' (2), ‘neither participant nor sibling is favoured' (3), ‘sibling is sometimes favoured' (4) to ‘sibling is usually favoured' (5). Additionally, these scores were later re-coded as absolute discrepancy scores.
The ASRQ was initially tested in a study to "describe the nature of sibling relationships in young adulthood and to examine correlates of individual differences in adults’ sibling relationships" (Stocker et al., 1997:1). The study was conducted using two samples. The first sample consisted of 148 undergraduate students from Colorado, with an average age of 20.6 years. The second sample consisted of 253 undergraduate students from Indiana, with an average age of 19.3 years. All participants were asked to report on their relationship with one sibling above the age of 17. Additionally, 62 participants from the Colorado sample and 118 participants from the Indiana sample completed the questionnaire again a second time over after two weeks, to collect test-retest reliability data. Furthermore, the survey was sent to participant's siblings. Cronbach's α was reported 0.97 for warmth, 0.93 for conflict and 0.88 for rivalry.

Modified Version of ASRQ (See appendix 6):
A modified version of the Adult Sibling Relationship Questionnaire (ASRQ) (Stocker et al., 1997) was used in this study. Specific questions were selected for the study based on what was deemed relevant to sibling rivalry as a phenomenon (See Appendix 2). The ASRQ questions related to both the initially identified thematic factors maternal/paternal rivalry and conflict were selected for the study. The decision to use questions relating to both factors was due to observing that many of the original 14 factors under the 'conflict' label were related to, and deemed expressive of, characteristics related to sibling rivalry for example; quarrelling, dominance, antagonism and competition. Furthermore, Stocker et al. (1997) found Conflict and Rivalry to have the most significant composite factor scores $r = 0.23$. Consequently, in the case of this study, a maternal/paternal rivalry is viewed as a 'type of' sibling rivalry.
Upon gathering the data, the questions were split into themes based on their content to offer a more in-depth analysis looking at specific components within a rivalrous sibling relationship. The themes identified were, Conflict, Admiration/pride, Closeness, Superiority, Jealousy and paternal/maternal rivalry all of which were deemed critical factors within sibling rivalry.

Procedure
Participants received the questionnaire in link form via the platform within which the survey was shared. Upon opening the questionnaire, they were shown the participant information sheet and asked to give informed consent before continuing with the study. Participants were then asked to make a unique participant code. Participants then filled out the modified version of the ASRQ.
Upon finishing the questionnaire participants were fully debriefed.

Results

Preparing the Data
Upon entering the data into SPSS, the independent variables, gender and age, were coded into the correct format. Question 40 "What gender do you identify as?" was re-coded into 1 = male and 2 = female. The age variable, Question 41, was re-coded into GenY = 18-28, GenX = 29-45 and 46+ to define three adult age groups, younger, middle and older. The dataset was tested for extreme outliers, highlighting one extreme outlier (case no.74) which was removed from the dataset. Furthermore, the dependent variable (sibling rivalry) was defined into six groups (rivalry factors) based on the context of each question as follows;
Conflict = Q1, Q6, Q7, Q10, Q11, Q22, Q23, Q24, Q25, Q31, Q32.
Jealousy = Q17, Q18.
Admiration/Pride = Q2, Q3, Q12, Q13, Q26, Q27.
Superiority = Q33, Q34, Q35, Q36.
Closeness = Q21, Q29, Q30, Q38.
Parental Rivalry = Q8, Q9, Q14, Q15, Q19, Q20, Q28, Q36, Q37.
This was to allow for a more in-depth analysis, looking at sibling rivalry from a multi-dimensional approach based on findings from the previous literature.

Analysis

The results for each of the six rivalry factors were analysed using a series of two-way Analysis of Variance (ANOVA) tests and further post-hoc Tukey tests. All results were measured at $p < 0.05$.

Table 1.
The Means and Standard Deviation for Age and Gender Groups for Sibling Rivalry.

Sibling Rivalry	Gender	Age	*M*	*SD*	*N*
	Male	GenY	108.95	16.26	20
		GenX	116.60	16.01	5
		46+	123.67	13.58	12
		Total	115.41	16.82	37
	Female	GenY	116.15	13.76	39
		GenX	115.29	9.72	17
		46+	120.60	9.68	20
		Total	117.13	10.90	76
	Total	GenY	113.71	13.77	59
		GenX	115.59	11.01	22
		46+	122.50	11.36	32

(*M* = Mean; *SD* = Standard Deviation; *N* = Number of Participants)

The two-way ANOVA test found no significant main effect between age and gender groups for sibling rivalry $F(2,108) = 2.49$, $p = 0.19$. Furthermore, no significant main effect was found between males and females' $F(1,108) = 0.01$, $p = 0.92$. However, a significant main effect was found between age groups $F(2,108) = 6.90$, $p = 0.00$. A further post-hoc Tukey test was run to identify which age cohort the significant main effect occurred between, the results show a significant main effect occurred between GenY and 45+ $p = 0.00$.

Table 2.
The Means and Standard Deviation for Age and Gender Groups for Closeness.

Closeness	Gender	Age	*M*	*SD*	*N*
	Male	GenY	12.70	3.41	20
		GenX	13.00	2.35	5
		46+	15.42	3.53	12
		Total	13.62	3.48	37
	Female	GenY	13.95	3.31	40
		GenX	12.18	4.53	17
		46+	12.95	4.26	20
		Total	12.30	3.87	77

(*M* = Mean; *SD* = Standard Deviation; *N* = Number of Participants)

A two-way ANOVA examining the effects of gender and age on closeness as a factor of sibling rivalry found no significant interaction between gender and age regarding closeness with one's sibling, F (2,108) = 2.486, p = 0.088. Furthermore, no significant difference between males and females, F (1,108) = 0.651, p = 0.422, and age groups, F (2,108) = 1.037, p = 0.358 was identified.

Table 3.
The Means and Standard Deviation for Age and Gender Groups for Jealousy.

Jealousy	Gender	Age	*M*	*SD*	*N*
	Male	GenY	8.40	1.60	20
		GenX	8.60	1.14	5
		46+	8.83	1.59	12
		Total	8.57	1.52	37
	Female	GenY	8.44	1.57	39
		GenX	8.52	1.01	17
		46+	8.60	1.64	20
		Total	8.52	1.48	113

(*M* = Mean; *SD* = Standard Deviation; *N* = Number of Participants)

When analysing the results for jealousy the two-way ANOVA found no significant interaction between gender and age groups F (2,108) = 0.102, p = 0.904. Furthermore, no significant difference was found in prevalence of sibling jealousy between age groups F (2,108) = 0.332, p = 0.718 and between males and females' F (1,108) = 0.050, p = 0.824.

Table 4.
The Means and Standard Deviation for Age and Gender Groups for Conflict.

Conflict	Gender	Age	*M*	*SD*	*N*
	Male	GenY	35.80	8.11	20
		GenX	35.60	7.89	5
		46+	42.17	4.82	12
		Total	38.12	7.57	37
	Female	GenY	39.33	7.88	39
		GenX	43.47	6.67	17
		46+	42.90	6.58	20
		Total	41.20	7.46	76

(*M* = Mean; *SD* = Standard Deviation; *N* = Number of Participants)

The two-way ANOVA found a significant main effect between males and females' F (1,107) = 4.161, p = 0.044, and a further significant main effect in levels of sibling conflict across age groups F (2,107) = 4.641, p = 0.012. A Tukey post-hoc test was run to establish which age groups were significantly different, and the results

displayed a significant difference between GenY and 46+, $p = 0.016$. However, no significant difference was found between GenX and 46+ $p = 0.968$ and GenY and GenX $p = 0.075$.

Table 5.
The Means and Standard Deviation for Age and Gender Groups for Admiration/Pride.

Admiration/Pride	Gender	Age	*M*	*SD*	*N*
	Male	GenY	14.65	4.22	20
		GenX	16.40	6.23	5
		46+	17.00	5.70	12
		Total	15.65	4.99	37
	Female	GenY	15.95	4.46	40
		GenX	13.00	4.91	17
		46+	14.25	5.78	20
		Total	14.86	5.02	77

(*M* = Mean; *SD* = Standard Deviation; *N* = Number of Participants)

A two-way ANOVA looking at admiration/pride as the dependant variable found no significant interaction between age and gender, $F(2,108) = 2.303$, $p = 0.105$. Furthermore, no significant difference was found in mean sibling admiration/pride between age groups $F(2,108) = 0.178$, $p = 0.837$, or between gender groups $F(1,108) = 2.053$, $p = 0.155$.

Table 6.
The Means and Standard Deviation for Age and Gender Groups for Superiority.

Superiority	Gender	Age	*M*	*SD*	*N*
	Male	GenY	11.95	1.82	20
		GenX	13.00	2.55	5
		46+	14.75	2.42	12
		Total	13.00	2.43	37
	Female	GenY	12.90	2.07	39
		GenX	12.47	2.10	17
		46+	13.25	2.00	20
		Total	12.90	2.05	76

(*M* = Mean; *SD* = Standard Deviation; *N* = Number of Participants)

The two-way ANOVA looking at superiority found a statistically significant interaction between age and gender groups regarding feelings of superiority towards one's sibling $F(2,108) = 3.468$, $p = 0.035$. Furthermore, a significant main effect was found between age groups $F(2,108) = 5.609$, $p = 0.005$. A further post-hoc Tukey test was run in order to observe which groups the significant difference was observed between. The analysis showed a significant difference between GenY and 46+ $p =$

0.022. However, no significant difference was found between males and females' *F* (1,108) = 0.577, *p* = 0.449.

Table 7.
The Means and Standard Deviation for Age and Gender Groups for Maternal and Paternal Rivalry.

Maternal/Paternal Rivalry	Gender	Age	*M*	*SD*	*N*
	Male	GenY	25.45	5.11	20
		GenX	28.00	7.34	5
		46+	27.33	6.15	12
		Total	26.40	5.70	37
	Female	GenY	25.76	4.83	39
		GenX	25.65	5.51	17
		46+	28.65	5.79	20
		Total	26.44	5.34	76

(*M* = Mean; *SD* = Standard Deviation; *N* = Number of Participants)

The results from the two-way ANOVA looking at paternal/maternal rivalry found no statistically significant interaction between age, gender and paternal/maternal rivalry *F* (2,108) = 0.588, *p* = 0.557. Furthermore, there was no significant difference found in mean paternal/maternal rivalry between gender groups F (1,108) = 0.048, *p* = 0.827, and between age groups *F* (2,108) = 0.588, *p*= 0.145.

Discussion

The findings from the current study do not support either of the proposed hypotheses. The first hypothesis proposed the younger cohort (GenY) to express higher amounts of sibling rivalry in comparison to the older cohort (46+). However, the findings from the present study show the 46+ age group to display the highest amounts of sibling rivalry *M* = 122.50 and the 18-28 age group to express the lowest amounts of sibling rivalry *M* = 113.71. Furthermore, hypothesis two proposed there to be a significant difference in the sibling rivalry between male and female participants. The results however indicate no significant difference in sibling rivalry between male and female participants' *F* (1,108) = 0.01, *p* = 0.923.

Furthermore, analysis of the results looking at sibling rivalry as a construct of six rivalry factors (closeness, conflict, jealousy, admiration/pride, superiority and maternal/paternal rivalry) found gender and age to have a significant effect on perceived sibling conflict and superiority. Participants within the female 46+ age group were found to express the highest levels of sibling conflict *M* = 42.90 and males within the GenX age group where found to express the lowest amounts of

sibling conflict *M* = 35.60. Through post-hoc analysis this effect was found to be most significant between GenY (18-28) and the 46+ age group. The significant main effect for sibling superiority was also found between GenY and the 46+ age group and Males within the 46+ cohort were found to express the most sibling superiority *M* = 14.75. Jealousy, closeness, admiration/pride, and maternal/paternal rivalry were found to be unaffected by age and gender. Overall, the findings do not present gender to have a significant effect on sibling rivalry however they do present age to be a significantly affecting factor. Further research into the effects of age on adult sibling conflict and superiority may be useful in observing how and why the sibling relationship changes throughout the years in-between the two significantly different age groups (18-28 and 46+).

The results from the current study lend support to previous literature on the occurrence of sibling rivalry in adulthood (Bedford, 1989; Stocker et al., 1997). However, the results contradict past research finding sibling rivalry to decrease in later adult life as the 46+ cohort was found to display the highest amounts of sibling rivalry across the three age groups. This finding contradicts Ross and Milgram's (1982) theory of adult siblings looking to repair relations as they reach the later stages of adulthood.

The findings regarding sibling conflict reflect that of Stocker et al.'s (1997) study as they show that sibling conflict continues to occur in adulthood. However, the current study offers further insight into sibling conflict within adulthood by differentiating between young adults 18-28years of age and the older cohort 46+. However, Stocker et al.'s (1997) study examined sibling conflict as a general characteristic of sibling relationships instead of as a factor within sibling rivalry, as is the case with the current research. This leads one to question whether the present study's use of sibling conflict as a factor within rivalry is accurate as a form of measurement of sibling rivalry, as it could be argued that Stocker et al.'s (1997) approach to conflict is more accurate of the sibling relationship and not just a factor of rivalry. This is further supported by Reis and Sprecher (2009) who argue “sibling conflict and rivalry are two different concepts, and the motivations behind each differ considerably” (Reis and Sprecher, 2009:2). Reis and Sprecher (2009) further this observation differentiating between sibling rivalry and conflict as two different phenomena due to conflict being a common aspect of social relations whereas rivalry is believed to occur due to competition over resources. Furthermore, future implications of this research and future sibling rivalry research may be influenced by how one defines conflict and rivalry eg. a trait of one another or each their own aspect of sibling relations. Reis and Sprecher (2007) observe sibling conflict to be detrimental to sibling relations in comparison to Coleman and Ganong (2014) who observed rivalry to occur often alongside closeness. A rivalry is not deemed a wholly negative trait of a sibling relationship whereas conflict is more commonly considered a negative characteristic.

Superiority between siblings was found to be affected by age, with significant differences shown between early and late adulthood. These findings support Levy's (1939) observation of ‘compensatory superiority' as a response to sibling rivalry as they further stress the potential link between feelings of superiority and sibling rivalry. Furthermore, the finding that males within the 46+ cohort expressed the most sibling superiority was interesting in that it lends itself to the theory of gender-based

preferential treatment, suggesting male siblings to be taught, and to maintain into later life, feelings of superiority towards one's sibling. Future research of a longitudinal nature would be insightful in this field as it would offer more insight into the maintenance and longevity of the effects of gender-specific parenting on the sibling relationship.

However, the lack of significant findings for the other sibling rivalry factors measured in the study leads one to question whether the modified version of the ASRQ is an accurate form of measuring sibling rivalry. Future research may benefit from the use of a scale designed solely for measuring sibling rivalry rather than that of a scale that looks to examine the sibling relationship from a multi-dimensional perspective. However, as previously mentioned, a scale of this nature appears to be lacking in sibling rivalry research. Alternatively, a qualitative approach, like that of Bedford's (1989) study, may be useful in that a technique, such as interviews, offers the opportunity for a more in-depth personal analysis which may be better suited to studying sibling relationships.

The use of social media as a form of opportunity sampling was found to be effective in gathering a substantial sample, however, although social media allows for one to reach participants from a wider range of locations, it limits the sample to the social spheres of the researcher, as can be seen with the sample sizes of each age group. GenY (18-28) was significantly larger (N = 60) than that of GenX (29-45; N = 22) and 46+ (N = 32) due to social media being a more prominent part of younger adult culture. Thus, this sampling technique, although effective in gathering a large sample, was limited only to those who use social media. Similarly, the use of the Manchester Metropolitan University Psychology Department participation pool was also effective in gathering a sufficient sample size, yet limiting in that only currently enrolled Manchester Metropolitan University psychology students were enabled access to the study. Further research outside of the UK looking at the effects of age and gender on sibling rivalry within different cultures may be an interesting area of future study, as Levy's (1939) study displayed sibling rivalry to be a universal phenomenon. Research looking at sibling rivalry within different cultures and communities may be particularly interesting regarding the gender differences displayed in the data due to different cultures having different gender roles and norms.

In conclusion, the findings from the current study were surprising in that they display alternative results to the previous literature regarding the prevalence of sibling rivalry in later adult life. However, the present study failed to offer further insight into the relationship between gender and rivalry, finding no significant difference between males and females.

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